

**GS-1306**

**Health Physics Series**

**GS-1306**

*Use these individual occupational requirements in conjunction with the "Group Coverage Qualification Standard for Professional and Scientific Positions."*

*Basic Requirements:*

- A. Degree: natural science or engineering that included at least 30 semester hours in health physics, engineering, radiological science, chemistry, physics, biology, mathematics, and/or calculus.
- OR
- B. Combination of education and experience—courses as shown in A above, plus appropriate experience or other education; or certification as a health physicist by the American Board of Health Physics, plus appropriate experience and other education that provided an understanding of sciences applicable to health physics comparable to that described in paragraph A.

**GS-1310**

**Physics Series**

**GS-1310**

*Use these individual occupational requirements in conjunction with the "Group Coverage Qualification Standard for Professional and Scientific Positions."*

*Basic Requirements:*

- A. Degree: physics; or related degree that included at least 24 semester hours in physics.
- OR
- B. Combination of education and experience—courses equivalent to a major in physics totaling at least 24 semester hours, plus appropriate experience or additional education.

In either A or B above, the courses must have included a fundamental course in general physics and, in addition, courses in any two of the following: electricity and magnetism, heat, light, mechanics, modern physics, and sound.

**GS-1311**

**Physical Science Technician Series**

**GS-1311**

*Use these individual occupational requirements in conjunction with the "Group Coverage Qualification Standard for Technical and Medical Support Positions."*

*Specialized Experience (for positions at GS-4 and above):* Examples of qualifying specialized experience include work in the fields of astronomy, physics, geophysics, chemistry, hydrology, health physics, engineering, electronics, geology, oceanography, and metallurgy.

Experience as a laboratory mechanic or in a trade or craft may be credited as general or specialized experience when the work was performed in close association with physical scientists or other technical personnel and provided intensive knowledge of appropriate scientific principles, methods, techniques, and precedents.

OR

*Education and Training:*

- For GS-3:* Successful completion of 1 year of study that included at least 6 semester hours in any combination of courses such as physical science, engineering, or any branch of mathematics, except financial and commercial mathematics.
- For GS-4:* Successful completion of 2 years of study that included at least 12 semester hours in any combination of courses such as those shown above for GS-3.
- For GS-5:* Successful completion of a full 4-year course of study leading to a bachelor's degree (a) with major study in an appropriate field of physical science, or (b) that included at least 24 semester hours in any combination of courses such as those shown above for GS-3.

**GS-1313**

**Geophysics Series**

**GS-1313**

*Use these individual occupational requirements in conjunction with the "Group Coverage Qualification Standard for Professional and Scientific Positions."*

*Basic Requirements:*

- A. Degree: that included at least 30 semester hours in mathematics (including calculus) and the physical sciences (geophysics, physics, engineering, geology, astronomy, meteorology, electronics, etc.).
- OR
- B. Combination of education and experience—courses as shown in A above, plus appropriate experience or additional education.

**FOR DEPARTMENT OF THE INTERIOR POSITIONS WITH PILOT DUTIES**

**Applicants must:**

- Possess a current FAA Commercial Airman Certificate with ratings appropriate for the duties performed;
- Possess an instrument rating;
- Have completed a minimum of 500 hours of flight time as Pilot-in-Command and 25 hours of flight time as Pilot-in-Command at night; and
- Possess a current Class II Medical Certificate.

**GS-1315**

**Hydrology Series**

**GS-1315**

*Use these individual occupational requirements in conjunction with the "Group Coverage Qualification Standard for Professional and Scientific Positions."*

*Basic Requirements:*

- A. Degree: physical or natural science, or engineering that included at least 30 semester hours in an combination of courses in hydrology, the physical sciences, geophysics, chemistry, engineering science, soils, mathematics, aquatic biology, atmospheric science, meteorology, geology, oceanography, or the management or conservation of water resources. The course work must have included at least 6 semester hours in calculus (including both differential and integral calculus), and at least 6 semester hours in physics. Calculus and physics, as described above, are requirements for all grade levels.
- OR
- B. Combination of education and experience—course work as shown in A above, plus appropriate experience or additional education.

*Evaluation of Experience:* Acceptable experience must have included performance of scientific functions related to the study of water resources, based on and requiring a professional knowledge of related sciences and the consistent application of basic scientific principles to the solution of theoretical and practical hydrologic problems. The following is illustrative of acceptable experience: field or laboratory work that would require application of hydrologic theory and related sciences such as geology, geo-chemistry, geophysics, or civil engineering to making observations, taking samples, operating instruments, assembling data from source materials, analyzing and interpreting data, and reporting findings orally and in writing. In some cases, professional scientific experience that is not clearly water resource experience may be acceptable if such experience was preceded by appropriate education in hydrology or by professional hydrology experience.

Applicants with related experience in hydrology gained through earlier Federal Government employment might have gained that experience in one or more occupational series. Such series include Soil Conservation, GS-457; Forestry, GS-460; Soil Science, GS-470; Civil Engineering, GS-810; Chemistry, GS-1320; Meteorology, GS-1340; and Geology, GS-1350. Comparable non-Federal experience may be given similar

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credit.

**GS-1316**

**Hydrologic Technician Series**

**GS-1316**

*Use these individual occupational requirements in conjunction with the "Group Coverage Qualification Standard for Technical and Medical Support Positions."*

*Specialized Experience (for positions at GS-4 and above):* Examples of qualifying specialized experience include:

- Technician or aid in engineering, earth, physical, or natural science, forestry, soil conservation, or surveying.
- Trades or crafts work in maintenance or construction of facilities or equipment related to hydrology.
- Drafting.
- Construction estimating.

OR

*Education and Training:*

*For GS-3:* Successful completion of 1 year of study that included at least one course in subjects such as engineering, industrial technology, construction drafting, surveying, physical science, biology, or mathematics.

*For GS-4:* Successful completion of 2 years of study that included at least 12 semester hours in any combination of courses such as those shown above for GS-3.

*For GS-5:* Successful completion of a full 4-year course of study leading to a bachelor's degree with (a) major study in an appropriate field of science, engineering, construction, or industrial technology, or (b) that included at least 24 semester hours in any combination of courses such as those shown above for GS-3.

**GS-1320**

**Chemistry Series**

**GS-1320**

*Use these individual occupational requirements in conjunction with the "Group Coverage Qualification Standard for Professional and Scientific Positions."*

*Basic Requirements:*

- A. Degree: physical sciences, life sciences, or engineering that included 30 semester hours in chemistry, supplemented by course work in mathematics through differential and integral calculus, and at least 6 semester hours of physics.

OR

- B. Combination of education and experience—course work equivalent to a major as shown in A above, including at least 30 semester hours in chemistry, supplemented by mathematics through differential and integral calculus, and at least 6 semester hours of physics, plus appropriate experience or additional education.

**GS-1321**

**Metallurgy Series**

**GS-1321**

*Use these individual occupational requirements in conjunction with the "Group Coverage Qualification Standard for Professional and Scientific Positions."*

*Basic Requirements:*

- A. Degree: metallurgy or metallurgical engineering that included at least 20 semester hours in metallurgical subjects.
- OR
- B. Combination of education and experience—courses equivalent to a major, as shown in A above, plus appropriate experience or additional education.

**GS-1330**

**Astronomy and Space Science Series**

**GS-1330**

*Use these individual occupational requirements in conjunction with the "Group Coverage Qualification Standard for Professional and Scientific Positions."*

*Basic Requirements:*

- A. Degree: in one or a combination of astronomy, physics, mathematics, space science, or electronics. The course work must have included differential and integral calculus and 12 semester hours in astronomy and/or physics.
- OR
- B. Combination of education and experience—at least 30 semester hours of courses equivalent to a major in any combination of astronomy, space science, physics, mathematics, and electronics, with required course work as shown in A above, plus appropriate experience or additional education.

**GS-1340**

**Meteorology Series**

**GS-1340**

*Use these individual occupational requirements in conjunction with the "Group Coverage Qualification Standard for Professional and Scientific Positions."*

*Basic Requirements:*

- A. Degree: meteorology, atmospheric science, or other natural science major that included:
1. At least 20 semester (30 quarter) hours of credit in meteorology/atmospheric science including a minimum of:
    - a. Six semester hours of weather analysis and forecasting; and
    - b. Six semester hours of dynamic meteorology.
  2. Six semester hours of college physics.
  3. Differential and integral calculus.
- OR
- B. Combination of education and experience—course work as shown in A above, plus appropriate experience or additional education.

**GS-1341**

**Meteorological Technician Series**

**GS-1341**

*Use these individual occupational requirements in conjunction with the "Group Coverage Qualification Standard for Technical and Medical Support Positions."*

*Specialized Experience (for positions at GS-4 and above):* Examples of qualifying specialized experience include:

- Measuring meteorological phenomena with scientific equipment and instrumentation.
- Observing and recording atmospheric characteristics, i.e., temperature, air movement, visibility, pressure, air density, cloud types.
- Decoding, plotting, and systematically recording data related to the physical characteristics of the atmosphere, i.e., charts, diagrams, cross sections.
- Collecting, analyzing, interpreting, adjusting, and verifying atmospheric and other meteorological data to confirm and improve accuracy and efficacy.

OR

*Education and Training:*

- For GS-3:* Successful completion of 1 year of study that included at least one course in meteorology, mathematics, engineering, or physical science.
- For GS-4:* Successful completion of 2 years of study that included at least 12 semester hours in any combination of courses such as those shown above for GS-3.
- For GS-5:* Successful completion of a full 4-year course of study leading to a bachelor's degree with major study or at least 24 semester hours in any combination of courses such as those shown above for GS-3.

**GS-1350**

**Geology Series**

**GS-1350**

*Use these individual occupational requirements in conjunction with the "Group Coverage Qualification Standard for Professional and Scientific Positions."*

*Basic Requirements:*

- A. Degree: geology, plus 20 additional semester hours in any combination of mathematics, physics, chemistry, biological science, structural, chemical, civil, mining or petroleum engineering, computer science, planetary geology, comparative planetology, geophysics, meteorology, hydrology, oceanography, physical geography, marine geology, and cartography.

OR



## GS-1350 (Continued)

- B. Combination of education and experience—course work as shown in A above, plus appropriate experience or additional education.

*Evaluation of Experience:* Acceptable experience may have been gained through geological field or laboratory work that provided a means of obtaining professional knowledge of the theory and application of the principles of geology and closely related sciences, e.g., geophysics, geochemistry, or hydrology. Such work generally must have involved making close observations, taking samples, handling various types of instruments and equipment, assembling geologic data from source materials, and analyzing and reporting findings orally and in writing. Experience that involved only one phase of geology work, e.g., collecting samples, would not be acceptable as providing the required professional knowledge of the theory and principles of geology. In some situations, professional scientific experience in other fields may be accepted in part as professional geological experience. Such experience *must have been preceded* by appropriate education in geology or by professional geological experience, and must have contributed directly and significantly to the applicant's professional geological competence. Examples include some positions in geophysics, mining engineering, soils science, physical oceanography, hydrology, climatology, biology, analytic or experimental chemistry, metallurgy, and comparable fields where the normal duties or results of investigations have been extended to the solution of geologic problems by the applicant. Ordinary functions of positions such as seismic, computer, petroleum or mining engineer, mine superintendent, or metallurgist generally are not considered professional geological experience. To receive credit for geological experience obtained in positions that are not full-time professional geological positions, the applicant is responsible for indicating clearly the actual time or percentage of time devoted to geologic duties within such positions, and for giving adequate descriptions of the geologic functions.

### FOR DEPARTMENT OF THE INTERIOR POSITIONS WITH PILOT DUTIES

Applicants must:

- Possess a current FAA Commercial Airman Certificate with ratings appropriate for the duties performed;
- Possess an instrument rating;
- Have completed a minimum of 500 hours of flight time as Pilot-in-Command and 25 hours of flight time as Pilot-in-Command at night; and
- Possess a current Class II Medical Certificate.

## GS-1360

## Oceanography Series

## GS-1360

*Use these individual occupational requirements in conjunction with the "Group Coverage Qualification Standard for Professional and Scientific Positions."*

### *Basic Requirements:*

- A. Degree: major study of at least 24 semester hours in oceanography or a related discipline such as physics, meteorology, geophysics, mathematics, chemistry, engineering, geology, or biology, plus 20 additional semester hours in any combination of oceanography, physics, geophysics, chemistry, mathematics, meteorology, computer science, and engineering sciences.

OR

- B. Combination of education and experience—course work as shown in A above, plus appropriate experience or additional education.

Applicants who qualify on the basis of major study in biology or geology must have had at least 6 semester hours in the major directly concerned with marine science or 6 semester hours in oceanography; applicants who qualify on the basis of other physical sciences or engineering must have had differential and integral calculus and at least 6 semester hours in physics.

**GS-1361**

**Navigational Information Series**

**GS-1361**

*Use these individual occupational requirements in conjunction with the "Group Coverage Qualification Standard for Administrative and Management Positions."*

**EDUCATION/TRAINING**

*Undergraduate and Graduate Education:* Major study—navigation, mathematics, physics, astronomy, geography, meteorology, engineering, cartography, or other subjects related to aeronautical or marine navigation and operations.

Graduation from the United States Naval, Air Force, Coast Guard, or Merchant Marine academies, or from one of the State maritime academies meets the undergraduate education requirements.

Successful completion of a course of flying or air navigation at one of the U.S. Government (Air Force, Navy, etc.) aeronautical or aviation training schools may be credited at the rate of 1 year of full-time training for 9 months of general experience.

Any time-equivalent combination of the above.

OR

**EXPERIENCE**

*General Experience (for GS-5 positions):* Experience that demonstrated a knowledge of the various types of work in the field of aeronautical or marine operations. General experience in one option, i.e., aeronautical or marine, qualifies for the general experience required in the other option. Examples of qualifying experience include:

*Marine:*

- Navigating and sea experience as a licensed Merchant Marine Officer on U.S. ocean-going vessels (over 1,000 gross tons), or as a commissioned officer on an ocean-going vessel of the United States Government with assigned duties as a navigator.
- Experience in preparing books or courses on marine navigational information, experience as a navigator, or experience as an instructor on navigational subjects, or other related experience.

*Aeronautical:*

- Civilian or military flying experience as a captain, pilot, co-pilot, navigator, or navigation instructor. A private, commercial, or military pilot's license or rating is required to gain credit for flying experience.
- Pilot, navigator, or instrument instructor experience that averaged a minimum of 200 hours of flying time each year may be credited on a year-for-year basis up to a maximum of 3 years of general experience; flying time of 600-800 hours qualifies for a GS-5.
- Civilian or military air traffic control experience involving the application of procedures and knowledge of such operations, including shift-type or supervisory responsibilities at a density station, center, or tower.
- Instructor in navigation (including celestial) or in piloting procedures and techniques at an accredited college or university or U.S. training school, or other comparable experience.

*Specialized Experience (for positions above GS-5):* Civilian or military experience in the field (aeronautical or marine) of the position for which application is made. Such experience must have involved the acquisition, collection, selection, analysis, evaluation, and preparation of reliable marine or aeronautical information on navigation and related operations, including publications related to navigation.

Over 800 hours of flying time qualify for GS-7 aeronautical positions based on flight experience alone; no additional credit is given for more than 800 hours.



**GS-1370**

**Cartography Series**

**GS-1370**

*Use these individual occupational requirements in conjunction with the "Group Coverage Qualification Standard for Professional and Scientific Positions."*

*Basic Requirements:*

- A. Degree: cartography; or a major that included or was supplemented by at least 30 semester hours in cartography and/or directly related science, and related mathematics. Such course work includes, but is not limited to, cartography, astronomy, geodesy, photogrammetry, physical and geological oceanography, computer science, land surveying, geophysics, physical geography, and remote sensing. The 30 semester hours must have included at least 6, but no more than 15, semester hours of college level, non-business mathematics or statistics (i.e., college level algebra, trigonometry, calculus, or scientific mathematics or statistics requiring equivalent college-level courses as prerequisites).
- OR
- B. Combination of education and experience—courses equivalent to a major in cartography, or a major that included or was supplemented by at least 30 semester hours in cartography, and/or directly related science, and related mathematics, as shown in A above, plus appropriate experience or additional education.

*Evaluation of Experience:* Applicants whose experience in cartography was in the Federal service may have gained this experience by working in an occupational series other than GS-1370. Occupations in which experience may have been gained include Geography, GS-150; Civil Engineering, GS-810; General Physical Science, GS-1301; Geodesy, GS-1372; and Land Surveying, GS-1373.

**GS-1371**

**Cartographic Technician Series**

**GS-1371**

*Use these individual occupational requirements in conjunction with the "Group Coverage Qualification Standard for Technical and Medical Support Positions."*

*Specialized Experience (for positions at GS-4 and above):* Experience in cartography or in a related field such as photogrammetry or geodesy, where the work required similar knowledge and skills.

OR

*Education and Training:*

- For GS-3:* Successful completion of 1 year of study that included at least 6 semester hours in courses such as cartography, relevant mathematical and statistical sciences, or related sciences, e.g., physical geography or geodesy. Not more than 3 of the 6 semester hours should have been in mathematics or statistics.
- For GS-4:* Successful completion of 2 years of study that included at least 12 semester hours in any combination of courses such as those shown above for GS-3. Not more than 6 of the 12 semester hours should have been in mathematics or statistics.
- For GS-5:* Successful completion of a full 4-year course of study leading to a bachelor's degree that included at least 18 semester hours in courses such as those shown above for GS-3. Examples of acceptable courses include cartography, astronomy, geodesy, photogrammetry, oceanography, computer science, land surveying, geophysics, remote sensing, algebra, trigonometry, and calculus. Not more than 9 of the 18 semester hours should have been in mathematics or statistics.

**GS-1372**

**Geodesy Series**

**GS-1372**

*Use these individual occupational requirements in conjunction with the "Group Coverage Qualification Standard for Professional and Scientific Positions."*

*Basic Requirements:*

- A. Degree: geodesy; or 30 semester hours in any combination of geodesy, mathematics, physics, astronomy, engineering science, surveying, geodetic surveying, photogrammetry, or geophysics. The course work must have included differential and integral calculus.
- OR
- B. Combination of education and experience—course work as shown in A above, plus appropriate experience or additional education.

**GS-1373**

**Land Surveying Series**

**GS-1373**

*Use these individual occupational requirements in conjunction with the "Group Coverage Qualification Standard for Professional and Scientific Positions."*

*Basic Requirements:*

- A. Degree: land surveying; or civil engineering with a surveying option/emphasis. The civil engineering major must have included at least 6 semester hours of surveying, 3 semester hours of land law, and 21 additional semester hours in any combination of the following: surveying, photogrammetry, geodetic surveying, geodesy, route surveying, remote sensing, cartography, survey astronomy, land information systems, computer-aided mapping, aerial photo interpretation, and survey analysis and adjustments.
- OR
- B. Combination of education and experience—courses equivalent to a major in land surveying or civil engineering as described in paragraph A, plus appropriate experience or additional education.
- OR
- C. The basic requirements for this series may be fully satisfied by a current registration as a land surveyor in a State, territory, or the District of Columbia obtained by written examination. Such registration must have been obtained under conditions outlined in the National Council of Engineering Examiners (NCEE) Unified Model Law for Registration of Surveyors. Applicants wishing to be considered under this provision must show evidence of registration based on successful completion of the written examinations. Registrations granted prior to adoption of a registration law with qualification requirements equivalent to the NCEE Model Law by the State, territory, or District of Columbia are not acceptable under this option. To be considered equivalent to the NCEE Model Law, registration laws must include the four options listed within the NCEE Unified Model Law in the section specifying "General Requirements for Registration" as a Professional Land Surveyor.

**GS-1374**

**Geodetic Technician Series**

**GS-1374**

*Use these individual occupational requirements in conjunction with the "Group Coverage Qualification Standard for Technical and Medical Support Positions."*

*Specialized Experience (for positions at GS-4 and above):* Examples of qualifying specialized experience include:

- Experience acquired in connection with the planning of horizontal and vertical control networks.
- The computation of geographic positions, grid coordinates, elevations, or the elements of map projections, or the preparation of technical reports and diagrams showing the status of geodetic survey projects.
- The evaluation of control networks.

Experience in field survey work, such as the making of accurate measurements and the field computations required for the establishment of third-order (or higher order) horizontal and vertical control to extend or supplement a national control network, may be considered as specialized experience and be credited on a year-for-year basis.

OR

*Education and Training:*

*For GS-3:* Successful completion of 1 year of study that included at least 6 semester hours of courses such as geodesy, geography, cartography, physical science, engineering science, forest mensuration, surveying, or any branch of mathematics except financial or commercial mathematics.

*For GS-4:* Successful completion of 2 years of study that included at least 12 semester hours in any combination of courses such as those shown above for GS-3.

*For GS-5:* Successful completion of a full 4-year course of study leading to a bachelor's degree with (a ) major study in geodesy or civil engineering, or (b) with at least 24 semester hours in any combination of courses such as those shown above for GS-3.

**GS-1380**

**Forest Products Technology Series**

**GS-1380**

*Use these individual occupational requirements in conjunction with the "Group Coverage Qualification Standard for Professional and Scientific Positions."*

*Basic Requirements:*

- A. Degree: wood technology, wood utilization, forestry, biological science, chemistry, physics, mathematics, engineering, or a related discipline or field of science that included at least 20 semester hours in appropriate forest products technology courses.
- OR
- B. Combination of education and experience—course work as shown in A above, plus appropriate experience or additional education.

*Evaluation of Education:* Forest products technology is a diversified occupation that requires the application of various combinations of scientific knowledge, skills, and abilities derived from the biological, physical, and mathematical sciences and engineering. These requirements vary considerably depending upon the purpose of the work. Therefore, the course requirements for this series are based on the premise that a forest products technologist can obtain necessary scientific and technological training through education in a pertinent discipline or field of science, or by taking appropriate combinations of courses in several disciplines or fields of science. Because the nature of the work varies so much, the actual requirements of any specific forest products technologist position are, to a large extent, determined by the job demands of that particular position.

Courses in chemistry, physics, and mathematics are qualifying, as are courses in wood technology and wood utilization, or courses that emphasized or dealt with the application of the biological, physical, and mathematical sciences and engineering to wood technology and wood utilization. To be qualifying, courses in botany should emphasize the basic aspects of the science or deal with such subject-matter areas as anatomy, morphology, and cytology. Courses in forestry should be applicable to forest products technology. Engineering courses should be in basic engineering, or directed toward mechanics, materials, or properties and utilization of materials. Courses in forest insects, forest pathology, statics, kinematics, or mechanics of materials are qualifying on the basis of their direct application to forest products technology.

**GS-1382**

**Food Technology Series**

**GS-1382**

*Use these individual occupational requirements in conjunction with the "Group Coverage Qualification Standard for Professional and Scientific Positions."*

*Basic Requirements:*

- A. Degree: food technology, or dairy technology, microbiology, biology, chemistry, physics, or a related discipline or field of biological or physical science. The course work must have been comprised of at least 30 semester hours in the basic biological and physical sciences, and included at least 20 semester hours in food technology and closely related subjects, or 20 semester hours in subjects that can be applied directly to food technology.
- OR
- B. Combination of education and experience—courses equivalent to a major, including the course work specified, as shown in A above, plus appropriate experience or additional education.

**GS-1384**

**Textile Technology Series**

**GS-1384**

*Use these individual occupational requirements in conjunction with the "Group Coverage Qualification Standard for Professional and Scientific Positions."*

*Basic Requirements—Cotton Technologist:*

- A. Degree: cotton technology; or related subjects such as physics, chemistry, or mechanical or electrical engineering that included courses in cotton technology totaling at least 20 semester hours.

OR

- B. Combination of education and experience—courses equivalent to a major in cotton technology or related subjects as shown in A above (including at least 20 semester hours in cotton technology courses), plus appropriate experience or additional education.

*Basic Requirements—Fiber Technologist:*

- A. Degree: fiber technology, biology, chemistry, physics; or a related subject-matter field that included at least 20 semester hours in fiber technology and related subjects.

OR

- B. Combination of education and experience—courses equivalent to a major in fiber technology, biology, chemistry, physics; or a related subject-matter field that included at least 20 semester hours in fiber technology and related subjects, as shown in A above, plus appropriate experience or additional education.

*Basic Requirements—Textile Technologist:*

- A. Degree: textile technology.

OR

- B. Combination of education and experience—courses equivalent to a major in textile technology that included at least 20 semester hours in textile technology and closely related subjects, plus appropriate experience or additional education.

**GS-1386**

**Photographic Technology Series**

**GS-1386**

*Use these individual occupational requirements in conjunction with the "Group Coverage Qualification Standard for Professional and Scientific Positions."*

*Basic Requirements:*

- A. Degree: scientific or engineering field that included 6 semester hours in college-level mathematics and 24 semester hours of courses in one or any combination of the following fields: photographic technology, photographic science, photogrammetry, engineering, physics, or chemistry.  
OR
- B. Combination of education and experience—at least 30 semester hours of courses as shown in A above, plus appropriate experience or additional education.  
OR
- C. A total of at least 4 years of education, training, and/or technical experience substantially equivalent to a full 4-year or longer professional engineering curriculum accredited by the Accreditation Board for Engineering and Technology. An applicant whose qualifications are evaluated under this paragraph must be registered as a professional engineer, or must have successfully passed the Engineer-in-Training examination, or must be currently employed in a professional engineering position in the Federal service.

*Evaluation of Education:* Courses in photography are qualifying only if they are technological or scientific in nature, rather than practical or artistic. Thus, for example, courses in photographic chemistry or photographic instrumentation would be qualifying, but those in commercial photography, portrait photography, etc. would not be.

*Evaluation of Experience:* Professional experience is defined as experience in non-routine phases of photographic technology, photographic science, photogrammetry, engineering, chemistry, physics, or a closely related science or discipline. This experience must have demonstrated a professional body of knowledge such as would be acquired through completion of all the requirements for a bachelor's degree in the discipline, a professional ability to apply scientific methodology to photographic technology problems, and a continuing development of professional knowledge and ability.

**GS-1397**

**Document Analysis Series**

**GS-1397**

*Use these individual occupational requirements in conjunction with the "Group Coverage Qualification Standard for Administrative and Management Positions."*

**EDUCATION**

*Undergraduate and Graduate Education:* Major study—physical and biological sciences, graphic arts, police science, criminology, or law.

OR

**EXPERIENCE**

*General Experience (for GS-5 positions):* Experience in one or more of the following:

- Microscopic examination of materials (such as bullets and cartridge cases, tools and tool marks, hairs and fibers) or the conduct of laboratory tests and experiments that provided a knowledge of scientific techniques, procedures, and instruments. Such experience may have been gained as a physical science aid or technician, laboratory aid, or quality control inspector.
- Investigation or law enforcement work that provided a familiarity and working knowledge of document identification and detection procedures and techniques.
- Photography where the purpose was to show accurate details of objects or to show information not available to the unaided eye. Such experience may have been gained in such fields as scientific, engineering, technical, or medical photography.
- Work that provided a technical knowledge of the graphic arts, printing, illustrating, and other recording and duplicating processes and of the related materials, equipment, instruments, and machines.

*Specialized Experience (for positions above GS-5):* Examples of qualifying specialized experience include:

- Examination and comparison of handwriting, printing, typewriting, and other mechanical impressions in order to make determinations of identity or genuineness.
- Analysis of inks, papers, and other recording instruments and materials by chemical, microscopic, and other methods in order to develop information useful in determinations of genuineness, integrity, security, origin, validity of date, or for restoration of mutilated or obliterated matter.
- Specialized document photography and preparation of photographic exhibits to be used for court demonstration purposes, or supervision of such work.

**GS-1399**

**Physical Science Student Trainee Series**

**GS-1399**

*Use the "Group Coverage Qualification Standard for Competitive Service Student Trainee Positions," as appropriate to the appointing authority used.*